Welcome from the ABoVE Leadership!

This is the first Arctic-Boreal Vulnerability Experiment (ABoVE) Field Campaign newsletter. Please distribute to others that may be interested. Send comments, news, and suggestions to support@cce.nasa.gov.

ABoVE is a NASA Terrestrial Ecology Program field campaign being conducted in Alaska and western Canada over the next decade. It is a diverse large-scale study of the impacts of environmental change on boreal and Arctic terrestrial and freshwater ecosystems, and the implications of these changes for social and ecological systems. ABoVE is an interagency, international and multidisciplinary effort that is based on a coherent observing strategy designed to meet its overarching objective: to investigate the underlying processes and their interactions that control vulnerability and resilience in Arctic and boreal ecosystems of western North America to environmental change, and to assess how people within and beyond this region respond to changes in these processes and interactions.

ABoVE research is based on analysis of remotely-sensed data from airborne and spaceborne systems, collection and analysis of field-based observations, and improvement and application of Earth systems models. The initial set of NASA funded projects were started in the fall of 2015. ABoVE now consists of 48 projects, 7 of which are funded by Partners and Affiliates. The ABoVE Science Team (which consists of all project investigators and collaborators) has prepared a Science Implementation Plan that provides the blueprint for research coordination.

The ABoVE Airborne Campaigns will begin with aircraft flying in 2017. This component of ABoVE will focus on providing a link between field measurements and satellite observations, to scale local observations regionally and then to the Arctic, as well as to advance airborne science and technology applications. The ABoVE Airborne

Campaign will consist of projects selected in the Fall of 2016 from proposals due in August 2016. In addition, NASA is in discussions with US and Canadian organizations to identify specific monitoring and research activities that would be coordinated with the research being funded by NASA. Some mutually agreed upon activities will become ABoVE Projects. The investigators and collaborators from all new projects (from both the Airborne Campaign and Partner Projects) become part of the ABoVE Science Team.

Finally, NASA is continuing to explore opportunities for ABoVE collaborations and partnerships with other organizations based upon identifying specific activities coordinated in a manner that is mutually beneficial to NASA and to the organizations seeking these partnerships. In Canada, discussions are ongoing with the Governments of Yukon and the Northwest Territories, the Canadian Space Agency, Canadian Forestry Service, the Canada Centre for Mapping and Earth Observation, and others. These collaborative efforts strengthen the impact of ABoVE on international Arctic science and policy efforts.

Hank Margolis: Program Manager, NASA Terrestrial Ecology Program
Eric Kasischke: Program Scientist, NASA Terrestrial Ecology Program
Scott Goetz: ABoVE Science Team Leader
Charles (Chip) Miller: ABoVE Deputy Science Team Leader
Peter Griffith: CCE Office: Chief Support Scientist

News from the Science Team Leads–Scott Goetz and Chip Miller

- ABoVE Implementation Plan Completed June 15, 2016
  The science leadership group would like to thank all those who contributed to the Implementation Plan, particularly the Working Group leads who coordinated the contributions of their WG members.

- Scott Goetz accepted a position at the Northern Arizona University as Professor in the new School of Informatics, Computing, and Cyber Systems. Goetz joins NAU in October of this year.

- **Special ABoVE AGU Session:** The resilience and vulnerability of Arctic and boreal ecosystems to climate change. Abstracts are due August 3rd.
  This session invites contributions in terrestrial ecology and carbon cycle science that provide conceptual, regional, or global insights into the resilience and vulnerability of the Arctic-boreal region to changing climate. Contributions may address any geographic area of this region. We welcome studies that use or integrate in situ experiments and observations with remote sensing and modeling to conceptualize, detect, predict or forecast the changing function of this region in the earth system.

  Primary Convener: **Michelle C Mack**, Northern Arizona University
  Conveners: **Scott J Goetz**, Woods Hole Research Ctr, **Joshua B Fisher**, Jet Propulsion Lab, and **Peter C Griffith**, NASA Goddard Space Flight Center.

Check out other AGU sessions this year that are relevant to ABoVE.

- **Dec 17, 2016**: Airborne Campaign Planning Workshop, San Francisco, CA
  Time and Venue TBD. Visit ABoVE Meetings for updated information.

- Highlights from the Northwest Canada Consultations are available.
  In May 2016, the ABoVE team co-sponsored workshops with POLAR Knowledge Canada and the governments of Northwest Territories and Yukon. Participants included US and Canadian researchers, aboriginal organizations and governments, and representatives from industry and non-governmental organizations.

- **3rd ABoVE Science Team Meeting to be held in Boulder, CO on Jan 17–20, 2017**. This meeting will include representatives of the current science team as well as new members selected from the current NASA ABoVE Airborne Science solicitation.

Scott Goetz: ABoVE Science Team Leader
Charles (Chip) Miller: ABoVE Deputy Science Team Leader

News from the CCE Office

- **ABoVE Project Types and How to Join!**

  NASA Project: NASA-funded projects, including: ABoVE-specific solicitations: NRA explicitly designates that selected projects will be part of ABoVE. Relevant other NASA solicitations: NRA does not explicitly designate that selected projects will be part of ABoVE, but the NASA Program Manager and PI have agreed that the project will have some association with ABoVE.

  Partner Project: fully funded projects by other agencies or institutions that have a formal partner agreement with NASA ABoVE.

  Affiliated Project: individual projects with funding from sources other than NASA or Partner Organizations.

  How to join ABoVE: NASA is seeking to establish formal relationships with individual investigators or organizations interested in coordinating ongoing research and monitoring activities with those being sponsored by NASA as part of ABoVE. These collaborative activities include exchanging information about related research and monitoring activities with ABoVE and/or collaborating on certain aspects of ABoVE. Those individuals or organizations seeking to become members of the ABoVE Science Team are encouraged to submit a short proposal.

  View more about project types and submitting a proposal

- **New ABoVE Projects**
  Nine projects have been approved since the 1st ABoVE Science Team Meeting. View new projects here.

- **Other NASA crosscutting funding opportunities here.**

- **ABoVE Data Newly Archived**

  ABoVE: Surface Water Extent, Boreal and Tundra Regions, North America, 1991-2011 View Here

  CARVE Modeled Gross Ecosystem CO2 Exchange and Respiration, Alaska, 2012-20146.30.2016) View Here

  CARVE: Monthly Atmospheric CO2 Concentrations (2009-2013) and Modeled Fluxes, Alaska (6/28/2016) View Here

  View all ABoVE project data that is available or archived

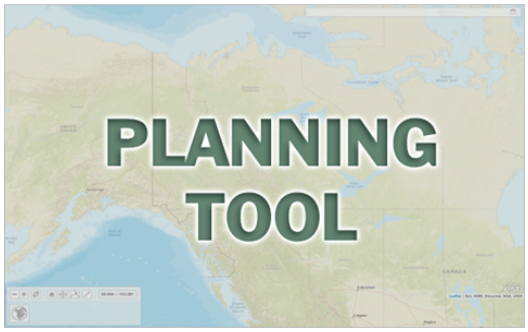
What's new on the ABoVE Website?

Search Tools

- People Search
- Site Search
- Project Profile
- Publications

Quicklinks

- New Projects
- Publications
- Project Data
- Data in Science Cloud



Sites and Measurements Planning Tool
Explore planned field measurements on this web map to see the where, what, when and who of science team efforts starting in 2016. Use it for planning future data collection and coordinating with other teams. Make sure YOUR project is represented!

Read More

Logistics Support at Fairbanks and in Canada

The Fairbanks Logistics Office is open for business with a small training room, staging area, storage space, office space, shower and equipment available for ABoVE researchers to use. In June and July we hosted courses including: Chainsaw, Boat, ATV, Arctic Field Safety, Bear Awareness, and UNAVCO Precision GPS.

Sarah Sackett student in the Chainsaw Course

The CCE Office has initiated a successful collaboration with the Government of Northwest Territories (GNWT). The GNWT provided multiple resources including storage and lab space in the Yellowknife and Ft. Providence area for ABoVE researchers to utilize.

Government of Northwest Territories Helibase in Yellowknife - Storage and office space

Check out the Safety and Logistics webpage for the most up to date information. If you have any questions or needs, please contact safety@cce.nasa.gov.

Get Involved with Outreach Activities

The ABoVE Implementation Plan describes in Section 6 several ways that ABoVE Science Team Members can get involved with Public Engagement activities. Opportunities for public engagement abound across the ABoVE Study Domain. Science Team members can contribute to sponsored ABoVE activities and may take advantage of time in the field to work with local community colleges, universities, museums, community centers, tribal councils, and other organizations. You may also meet with the local media producing stories, videos, or interviews.

The Carbon Cycle and Ecosystems Office can help coordinate and share your products from the ABoVE Website.

Recent activities are listed below with links to archived activities. The resources are also available from the ABoVE website Outreach Section.

Earth to Sky

ETS @ AK 2015
October 14-16, 2015
BLM Campbell Creek Science Center, Anchorage, AK

This course was focused on climate science and communication at a regional level. Science content included global perspectives applied to the Alaska region, specifics about how the changing climate is affecting Alaska, and how changes in Alaska are affecting global patterns. A field trip to Portage provided opportunity to experience first hand some of these changes, and served as a case study for communicating about climate with the public. The course emphasized experiential learning, beginning with a few distance-learning components accomplished by participants on their own prior to attending the three-day face-to-face session in Anchorage. Approximately four months after the sessions were completed in Anchorage, a one-hour class webinar will be held, during which participants will share progress and challenges and receive feedback/assistance in executing their action plans. The collegial atmosphere of this course provided participants with many opportunities to engage with scientists, other communication practitioners and colleagues in collaborative learning. Presentations and additional content are available on this website for free, to registered Earth to Sky members.

Earth to Sky returns to Alaska for a one-day event this fall. View event details here.

Learn more about Earth to Sky

GLOBE

In 2016, GLOBE began a new initiative to involve non-student citizen scientists in data collection. The new citizen science component of GLOBE, called GLOBE Observer, allows anyone to submit GLOBE observations through an easy-to-use smart phone app. GLOBE Observer aims to build and strengthen the overall GLOBE community by: increasing the density of GLOBE data available for student and science research; improving access to GLOBE data for students and scientists; developing a strong community of GLOBE supporters outside the traditional education realm; and increasing science literacy among participants.

GLOBE, in partnership with ABoVE and Earth to Sky, will pilot the first joint student-public regional field campaign in which participants collect observations in support of

ABoVE science. An ABoVE working group will guide the campaign by advising which observations should be collected, giving talks and/or blog posts about ABoVE science in schools, parks, community centers, and other venues, and providing feedback on student research as appropriate.

The campaign is an opportunity to use citizen science as a source of scientific data in Alaska and Canada. It is also a structured way to engage schools and communities both in and beyond the regions visited during field work.

Please contact Holli Riebeek Kohl if you are interested in participating in the ABoVE Student and Citizen Science working group or in leveraging the GLOBE campaign in your work.

Learn more about GLOBE

Earth Expeditions

Your planet is changing. We're on it, from land, sea and air.

NASA uses the vantage point of space to increase our understanding of our home planet, improve lives and safeguard our future. Our researchers collect and study data from space, land, sea and air to tackle challenges facing the world today, from improved environmental prediction to natural hazard and climate change preparedness. Follow this journey of exploration on our website, on Facebook, or on Twitter.

Calendar

Aug 1, 2016: NASA ABoVE Airborne Proposals Due

Oct 21, 2016: Earth to Sky Climate Change Mini-Course View Details

Dec 17, 2016: Airborne Campaign Planning Workshop, San Francisco, CA
Time and Venue TBD. Visit ABoVE Meetings for updated information.

Jan 17–20, 2017: ABoVE 3rd Science Team Meeting, Boulder, CO
Get up to date information at ABoVE Meetings.

PROJECT DATA AVAILABLE

Go to Data

ALL PROJECT DATA PRODUCTS

View Products

SCIENCE CLOUD DATA

Go to Data

NEW PROJECTS

View Projects

PUBLICATIONS

2015

2016